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ABSTRACT

Since India gained its independence in 1947, three important commissions have examined the issue of educational reform. The first (in 1948) recommended a vocational emphasis in the intermediate (predegree) courses without sacrificing emphasis on preparation for university education. In 1954, the Secondary Education Commission resulted in the creation of large numbers of multipurpose secondary schools in the country, and in 1966 a program of 10 years of general education followed by 2 years of general education or 1 to 3 years of vocational education was recommended. In 1968 it was decided that vocational courses should be effectively terminal and adequately diversified to cover a wide range of vocations. Progress in vocationalizing education has been slow, and the setup of vocational education differs from state to state. In 1983-84 approximately 60,000 students were enrolled in 1,500 institutions. Vocational courses are offered in agriculture, business and commerce, home science, paramedical occupations, and technology. The recommended model for all vocational courses calls for equal coverage of language and general studies, related subjects and foundation courses, and vocational theory and practice. Little information is available from the vocational program evaluations that have been conducted by individual states. It is felt that despite the fact that vocational education has thus far only reached 3.5 percent of India's population (the target is 50 percent), the program may attain its desired outcomes if it is put on sound footing. (MN)

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VOCATIONALIZING EDUCATION IN INDIA

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VOCATIONALIZING EDUCATION IN INDIA

Dr. A.K. Sacheti and Mr. S. Ray

1. INTRODUCTION

1.1 The quest for better education has been going on in India for the last one and a half centuries. During this period, several commissions and committees were set up to suggest reform in the education system. One of the major recommendations of these was to consider the secondary school stage not only as a preparatory stage for the pupils to enter the four walls of the University, but also as a terminal stage for those who may discontinue their studies and seek employment.

1.2 After independence in 1947, there have been three important commissions which looked into the question of reform in education. The first, the University Education Commission (1948), recommended a vocational bias in the intermediate (pre-degree) courses without sacrificing the emphasis on preparation for university education. The second, The Secondary Education Commission (1954), favoured diversification at the secondary stage which resulted into creation of large numbers of multipurpose secondary schools in the country. The constitution of the third, The Education Commission (1964-66), is considered as one of the most significant efforts in independent India to take an overall view of educational scenario in the country with its different patterns, structures and practices leading to a 'national pattern' and to define the aims and objectives in relation to the cultural and socio-economic goals of the nation. The Commission was of the view that education is the most vital tool for overall development and for enhancing productivity of the country and hence recommended complete transformation of the educational system in the country. One of the most significant recommendations was diversification at the 'plus two' stage, in the suggested 10+2+3 pattern of education, emerging into two distinct streams - academic and vocational. The most significant reasons behind this recommendation were to avoid forcing students into one academic channel; to reduce and eliminate frustration among the educated youth resulting from non-productive education; to check the mad rush to universities and to reduce unemployment. The last was the most important issue - the figures in the table (Annex I) indicate how massive is the problem of educated unemployed youth in the country. The data is based on the Live Register* maintained by the Director General of Employment and Training, Government of India.

2. EDUCATION SYSTEM

2.1 The Education Commission (1964-66) recommended a 10+2+3 pattern of education with ten years of general education followed by two years of general education or one to three years of vocational education. The Com-

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*Live Register Data suffers, however, from several limitations: (i) all persons on the Register are not unemployed; (ii) all unemployed persons are not registered in the Register; (iii) there is multiple registration in the Register.

mission also recommended a course of three years leading to a first degree. The Commission further recommended a Work Experience (WE) programme to bridge the gap between manual and intellectual work for all students in schools. The National Council of Educational Research and Training (NCERT) brought out a document entitled 'The Curriculum for the Ten Year School - A Framework' giving details of a programme which could be practised in schools throughout the country.

2.2 In view of the above recommendation, till July 1985, out of 31 States and Union Territories 27 have launched a 10+2+3 pattern of education. The remaining four States have decided in principle and are making necessary preparation to fall in line with the rest of the country.

2.3 The Work Experience programme as suggested by the Education Commission was slightly modified by the Ishwarbhai Patel Committee (1977) which reviewed the NCERT's document and came forward with the concept of Socially Useful Productive Work (SUPW) as a central theme of the ten year school. The Committee has defined SUPW as purposive, meaningful, manual work resulting in either goods or services which are useful to the community.

3 VOCATIONALIZATION AND ITS BACKGROUND

3.1 In support of the acceptance of the recommendations of the Education Commission (1964-66), the Government of India passed the National Policy of Education Resolution (1968). The Resolution particularly suggested that the vocational courses should be effectively terminal and adequately diversified to cover a wide range of vocations. While endorsing the Policy Resolution, the Central Advisory Board of Education (CABE), the highest policy making body in India in the field of education, at its 38th meeting held in November 1975, entrusted the task of preparing curricula and laying down strategies for implementation of the Vocational Education programme to the NCERT. This organisation is an apex body working for the improvement of school education for the country in association with other institutions responsible for the same at the national and State level. The linkages between NCERT and different institutions/departments are illustrated in Fig.1 (Annex II).

3.2 In compliance to the task assigned, the NCERT issued a document entitled 'Higher Secondary Education and Its Vocationalization' after considerable deliberation by a group of eminent educationists and a National Conference in which the officials of the States and Union Territories also participated. The document was sent to the State governments in 1976 for implementation of the programme. It highlights diversification as an important feature of the programme, besides flexibility in duration of courses, nature of courses (agriculture, business and commerce, home science, para-medical and technology), admission and streaming, choice of vocation, course structure, teacher orientation/training, collaboration, evaluation and recognition of the courses. In addition to these, the document suggests the introduction of vocational education courses in the general education institutions (higher secondary schools) which is considered as one of the most innovative features of the whole programme.

3.3 Two States and a Union Territory (West Bengal, 1976; Karnataka and Delhi, 1977) made a modest beginning by introducing quite a few numbers of vocations in a very small number of institutions. To run these the Government of India gave grants for equipment, salary of teachers, library and contingency to cover the cost of raw materials for practical work. The Government also provided grants for the conduct of District Vocational

Surveys to identify needs base vocations. But before the first batch of vocationally trained students could come out of the schools, there was a change in the Government in the latter half of 1977. The new Government appointed a National Committee to review the NCERT document on vocationalization and suggest modifications. The National Review Committee after going through the document gave detailed and concrete recommendations for implementing the vocational education programme at the higher secondary stage. The report was published under the title 'Learning to Do' (1978). Consequently, the Ministry of Education, Government of India, constituted a Working Group on Vocationalization independent of the above mentioned committee to work out a scheme for implementation and to assess financial implications. The Report was submitted to the Ministry in 1977 for its consideration.

3.4 The developments mentioned above slowed down the pace of introduction of the vocational programme in schools. However, some more States and Union Territories (Gujarat, Maharashtra, Andhra Pradesh, Kerala, Assam, Haryana, Uttar Pradesh; Pondicherry, Andaman and Nicobar Islands) during the period 1978-85 launched the programme on an experimental basis. One State, Tamil Nadu, adopted it on a large scale.

3.5 Since 1976, the NCERT has conducted a large number of seminars for vocationalizing education. Three National Seminars were conducted to take stock of the situation and to resolve certain queries for implementation. The first report was published as 'Learning to Earn' (1983), the second as 'Vocationalization of Education - Profile and Direction' (1985) and the third as 'Report of National Seminar on Vocationalization of Education' (December 1985). The purpose of the third seminar was to consider and report on matters related to the policy formulation on vocational education.

3.6 The present government which came in power in December 1984, contrary to the previous government, pledged education reform to counter the growing unemployment amongst educated youth of the country. To achieve this, the nation as a whole was urged to come out with reforms in education through discussions, debates, seminars, write-ups, views of thinkers and educationists. The NCERT, other national institutions and the State Governments were also asked to submit their views on the matter. The Union Education Minister (redesignated as the Minister for Human Resources Development) in his capacity as the ex-officio Chairman, All India Council for Technical Education (AICTE), constituted a National Working Group with the following terms of reference:

- i) To formulate the concept of vocationalization at different levels at which vocational education and training should be provided to meet the massive challenge of unemployment on the one hand and to reduce the overcrowding in higher education on the other;
- ii) to consider and recommend the nature of courses to be taken up in the vocational system under different sectors such as agriculture, health, pharmacy, technical education, commerce, business and industry. To consider and recommend the distribution of time between vocational training, vocational education and general education;
- iii) to consider and recommend the linkages required among various agencies running vocational programmes in order to give co-ordinated thrust to vocationalization and to ensure employment of those completing the same;
- iv) to consider ways and means, including provision of avenues for

higher education, to the students of vocational stream to make the vocational course more attractive;

- v) to consider the need for covering vocational courses under the Apprenticeship Act and make necessary recommendations on the same; and
- vi) to prepare an action plan about the selection of institutions, the selection of various courses, prescription of norms for instructional facilities, training of teachers, preparation for producing necessary instructional material and other related aspects to make necessary headway in promoting vocationalization in the country.

3.7 The Working Group submitted its report highlighting the spectrum and dimension of vocational education, work experience/SUPW for classes I to X, vocationalization of higher secondary education, vocational education: formal and non-formal programme/system, vocational education at the tertiary level, non-formal further education, the management system strategies for implementation, the role of government and non-government organisations and financial estimates in August 1985.

3.8 The exercise for developing the new education policy is still on but the final policy document is likely to be submitted to the Parliament before the commencement of next academic year (July 1986).

4. MANAGEMENT SYSTEM AND IMPLEMENTATION

4.1 The programme of vocationalization of education is administered by the Department of Education, Ministry of Human Resources Development, Government of India, at the national level. However, the curricular aspects are taken care by the Department of Vocationalization of Education (DVE), NCERT. These include orientation programmes for the key functionaries of States and Union Territories, development of model curriculum and instructional materials, conducting short-term teacher training, evaluation of the programme, organisation of national seminars, providing consultancies to the State authorities and monitoring of the programme. In addition, the Ministry has constituted the All India Board of Vocational Education for laying down the standards and the modalities for accreditation. At the regional level, there are three different types of institutions such as Regional Colleges of Education run by NCERT, Technical Teachers' Training Institutes and Boards of Apprenticeship Training. The functions of the first two institutions are very similar to that of DVE, NCERT, whereas the third arranges placement for vocationally trained students as apprentices in industries, agricultural farms, hospitals, hotels and commercial establishments.

4.2 The State authorities are responsible for offering vocational courses in schools. However, the set-up is different in States, such as Directorate of School Education in Tamil Nadu, Directorate of Vocational Education in Karnataka, Directorate of Higher Education in Andhra Pradesh. Similarly, examination is conducted by different agencies in the States. A few States have constituted the State Council of Vocational Education to lay down the standards and to arrange recognition of the courses in consultation with the departments concerned. The States have either developed their own curricula or adopted/adapted the curricula developed by NCERT. The programme is supervised by the District Vocational Education Officer at the district level. However, designation and area of control of the supervisory

staff varies from State to State. In some States, District Vocational Committees are also functioning to identify job opportunities through study of district plans, the nature of developmental activities and to assist vocational students for finding wage or self-employment. The institutions enjoy freedom with regard to choices within the curriculum. Work Experience/ On-the-Job Training (OJT) is built-in into some of the curricula prescribed by the States. The levels and functions of various organisations/institutions for implementing vocational education is illustrated in a tabular form (Annex III).

5 PRESENT POSITION

5.1 The Planning, Monitoring and Statistics Division of the Ministry of Human Resources Development, Government of India, has published aggregate data (selected Educational Statistics 1981-82, Department of Education, Government of India, New Delhi, 1983) on the school going population. Based on this, it is assumed that the population of various target groups during academic year 1985-86 would be as indicated in the table below:

Distribution of Student Population in various
Target Groups (in millions)

Sl. No.	Target Group	In General Education Schools	In Polytechnics and Vocational Schools/ Institutions	Out-of School	Total per Target Group
1	(a) Class I-V	20.00	-	-	20.00
	(b) Class VI-VIII	7.4	-	11.00	18.4
	(c) Class IX-X	4.9	-	11.5	16.4
2	Higher Secondary	2.45	-	11.55	14.0
3	Certificate and Diploma Courses	-	0.7	-	0.7

5.2 As the table above indicates 4.9 million students will appear for the first public examination conducted by the boards in April-May 1986. Assuming on an average fifty percent pass rate in the examination, 2.45 million students will be completing Class X. In the existing system, polytechnics and vocational schools/institutes can provide admission for 0.7 million students. The remaining 1.75 million students will have no choice but to join the academic stream or to discontinue education, since the vocational education programme is moving with a snail's speed due to lack of resources with the State Governments. It also suffered because specific grant for running vocational courses was discontinued in 1979 by the Central Government as a result of the plea of the State Governments that education is a State matter. However, allocation in the State Education budget was increased to cover the cost of running vocational courses.

5a. Enrolment

The total intake in vocational stream during 1983-84 was approximately 60,000 students in 1,500 institutions/schools (Annex IV). This is roughly 3.5% of the students who passed Class X Board examination during that year.

5b. Types of Courses

Vocational courses are offered in five major areas of economic and service sectors, viz., agriculture, business and commerce, home science, para-medical and technology. There are some other courses which do not fall into the areas indicated, and which, therefore, have been put under the heading miscellaneous. The duration of the courses, by and large, is two years. Approximately, 120 courses are presently offered in different institutions/schools in the States and the Union Territories. Area-wise list of courses is given in Annex V.

5c. NCERT's Role

Since the inception of the programme, to fulfil the task assigned by the Central Advisory Board of Education and to meet the requirement of the State Government, NCERT is providing necessary academic guidance and support for implementation in the States. As the District Vocational Survey is a prerequisite to introduction of vocational programme, NCERT has developed guidelines for the survey workers for conducting it. The survey should indicate specific areas of existing employment opportunities and opportunities likely to occur due to the proposed developmental plan and activities of the district, the number and duration of such opportunities, institutions suitable to impart vocational education, facilities for practical work and on-the-job training, availability of teachers, etc.

NCERT conducts orientation programmes to explain philosophy, concept, objectives and implementation strategies of vocational education for the key functionaries of the States on request. It develops competency based curricula for the vocations suggested by the State authorities and for prospective vocations through workshops involving representatives of employers, subject specialists, curriculum experts, vocational teachers, etc. Each curriculum highlights job opportunities, job description, job analysis, objectives, marking scheme, syllabus, and inputs required for effective implementation of the vocation. About 40 such curricula have been brought out by the end of 1985. These are sent to the States for adopting/adapting. It also helps the States in revising their curricula. Similarly, it develops instructional materials like teacher's guides, instructional-cum-practical manuals, textual materials, supplementary readers, question banks through workshops. The mimeographs of these materials are then sent for try-out to the vocational schools. The names of these are suggested by the State authorities. Feed-back of the try-out is incorporated in the materials through workshops and later printed for wider dissemination in the States. So far, NCERT had developed variety of materials in mimeographs form for about 20 vocations. It conducts in-service teacher training courses of short duration in collaboration with specialised institutions for skill improvement and up-dating knowledge of the subject for the vocational teachers. More than 1,500 teachers have been trained through such courses. It evaluates the State programmes from time to time to find out merits and demerits and to suggest corrective measures. It also monitors the activities of the States for the effective implementation of the programme.

5d. Course Pattern

Since the introduction of the programme, the NCERT document and a number of other reports dealing with vocationalization of education are available in the country. All these have prescribed three basic components for each vocational course viz., language(s), related subjects and foundation courses, vocational theory and practice with little variation in weightage. The pattern suggested by the NCERT document is as follows:

- | | |
|--|------------------------------------|
| (i) Language
General studies
(social, economic,
scientific, etc) | 25% for all the streams |
| (ii) Science, social
science, humanities,
including literature | 75% time for the academic stream |
| (iii) Science, social
science and humanities
courses designed to
explain the basis and
scope of various
vocations | 25% time for the vocational stream |
| (iv) Vocational theory and
practical work | 50% time for the vocational stream |

Recommendation of the National Review Committee (1978) is as follows:

- | | |
|------------------------------------|-------------------|
| (i) Language(s) | 15% of total time |
| (ii) General foundation
courses | 15% of total time |
| (iii) Elective subjects | 70% of total time |

The recommendation of the National Seminar on Vocationalization of Education (December 1985) for two-year duration vocational courses at the higher secondary stage is as follows:

- | | |
|--|-------------------|
| (i) Language (s) | 15% of total time |
| (ii) Related subjects
(science, humanities
and related studies
such as entrepreneur-
ship development) | 15% of total time |
| (iii) Vocational Theory and
Practice (including
on-the-job training) | 70% of total time |

While implementing the programme, the States have retained all the three components mentioned above but with slight modification (Annex VI). For example, Karnataka has combined related subjects with vocational theory and practice giving weightage up to 75% of total time and has come out with an integrated syllabi, whereas Haryana has a similar course pattern but with a General foundation course.

5e. Infrastructure

The States have introduced vocational courses in the existing schools where some basic facilities exist either in the school or in the neighbourhood. This is being done in view of the resource constraints and to derive maximum utilization of the input in the school. The State Governments have made provision of a grant for purchase of essential tools,

equipment, raw materials and books for library. The amount of the grant varies from State to State. Haryana is the only State in the country which has introduced the programme in new institutions with adequate funds.

5f. Teacher Preparation

No institution in the country is training teachers for vocational schools. However, the States have used different strategies to overcome the problem of teachers such as borrowing services of experienced subject specialists on deputation from concerned departments or engaging experienced retired personnel from defence services, commercial establishments, health services and industries or engaging skilled personnel on part-time basis. All these are only stop-gap arrangements. The need of teacher preparation for vocational courses due to expansion of the programme is being felt throughout the country. Meanwhile, the Government at the Centre is planning to introduce a teacher training programme to prepare teachers in vocational areas at the Regional Colleges of Education. Haryana State is also planning to start a teacher training college to prepare vocational teachers.

With regard to in-service teacher training, the NCERT and the State Governments are of the view that the present mechanism of in-service training as mentioned earlier is working well and should be continued and expanded. In addition, the State Governments are free to organise teacher training programmes to fulfil their urgent need.

5g. Collaboration

This is one of the many special features of the programme as it reduces the unit cost of vocational students. It has been observed that the facilities which exist in large numbers of institutions and government departments are either under-utilized or not utilized after termination of the scheme or the project. Therefore, these could be made available for imparting instruction to the vocational students. To bring this into force, the State Governments have issued orders asking such institutions and departments to participate with manpower and facilities in the endeavour of nation building through vocational preparation. This arrangement has met with a mixed response i.e. some institutions are providing full support in terms of manpower and facilities and others partial support only. There are also cases of non-cooperation.

5h. Apprenticeship Facility

In order to make the vocational education programme attractive for the students, the NCERT has been making efforts, since 1977, to provide apprenticeship facility. The prospects of getting such facilities is now much improved since the Central Apprenticeship Council has agreed to extend support by bringing a bill in the Parliament to amend the Apprenticeship Act 1961 to include vocational students. Meanwhile, the Department of Education, Ministry of Human Resources Development, Government of India, has initiated a scheme to encourage students to join vocational courses by providing the facility of apprenticeship to non-technical vocational course students. Under the scheme each student receives a stipend of Rs.200.00 per month for a period of six months. Placement of the student under this scheme is done by the Boards of Apprenticeship Training.

5i. Problems

The faculty of NCERT concerned with the programme has organised a large

number of activities viz., orientation of key functionnaries of the States, development and revision of curricula, teacher training, preparation of instructional materials, national seminars, evaluation studies during the last 9 years. Through these they have come in contact with more than 5,000 students, 1,800 teachers and 2,000 key officials including principals of the schools which have given them an opportunity to assess the problems faced by the State Governments in implementing the programme. Some of the major difficulties are in connection with:

- (i) District Vocational Surveys
 - a) Identification of courses
 - b) Selection of institutions/schools
- (ii) Selection of students
- (iii) Availability of suitable teachers
- (iv) Provision of pre-service and in-service teacher training
- (v) Arranging practical work in schools or collaborating institutions
- (vi) Supply of equipment and their repair and maintenance
- (vii) Availability of suitable instructional materials (print and non-print)
- (viii) Arranging on-the-job training
- (ix) Examination system
- (x) Recognition of the courses by the Government Departments
- (xi) Professional mobility/Further education
- (xii) Placement of students
- (xiii) Administrative set-up
- (xiv) Finance.

6. OUTCOME OF THE PROGRAMME

The NCERT has evaluated the programme offered by the States but very little information is available with regard to vocational products which have come out from the institutions. However, some of the States carry out studies to find out the fate of vocational students on a district basis from time to time. Such studies help them in taking corrective measures and future planning. One such study entitled 'Post-Secondary Pursuit of the Students of Vocational Spectrum Studies (1979-82)' was conducted by the NCERT by using data obtained from 67 institutions in Karnataka, 19 in Maharashtra and 4 in Andhra Pradesh. The following was the summary of the findings:

- I. The average percentage of students passing successfully with vocational training is fairly high, i.e. 77.8 - Karnataka, 69 - Andhra Pradesh and 67 - Maharashtra.
- II. Karnataka has 44.4 percent of its students gainfully employed in various vocations over a period of four years followed by Maharash-

- tra with only 3.5 percent and Andhra Pradesh with a mere 1.6 percent.
- III. Students going for wage-employment outnumber the self-employed ones by more than $2\frac{1}{2}$ times.
 - IV. The percentage of gainfully employed students in all the three States has declined gradually from year to year due to the introduction of some new courses with little relevance to the local needs.
 - V. About 59.0 percent of vocational students in Maharashtra joined colleges etc. for further studies followed by 40 percent in Andhra Pradesh and 29.8 percent in Karnataka.
 - VI. Karnataka with highest percentage of gainfully employed students has a progressively increasing percentage of students joining degree courses, whereas the latter is reducing or nearly constant at the previous higher level in Maharashtra and Andhra Pradesh.
 - VII. Students of para-medical vocational courses in Karnataka were on top of the employment ladder (74.0 percent), followed by those of home science (59.5 percent), technical (57.9 percent), agriculture (46.3 percent) and commerce-based vocational courses (28.0 percent).
 - VIII. The following courses (one from each vocational area) have proved quite successful from the point of view of their employment potentials: Laboratory Technician, Clothing and Embroidery, Textile Technology, Sericulture and Cooperation.
 - IX. By and large commerce-based vocational courses have fewer employment opportunities for their students in comparison with courses of other vocational areas and this accounts for the highest percentage of students of these courses going for higher studies.
 - X. Performance in one and the same vocational course varies from institution to institution depending upon several factors.

In light of the above, many more studies are required, especially for other States, to take a comprehensive view of the programme and status of vocationalization in the country.

7. CONCLUSIONS

The programme has covered about 3.5% of the students completing ten years of schooling. To reach the target of 50% set by the Education Commission (1964-66), the Government of India and State Governments jointly and separately will have to undertake massive teacher preparation, equip schools, create suitable administrative structures, strengthen the monitoring and coordinating agencies, modify recruitment rules, de-link degrees from the jobs, provide apprenticeship facility and arrange a huge sum required for effective implementation.

It is felt that though the progress is slow, if the programme is put on sound footing by providing necessary inputs, it may result into the desired outcomes in times to come.

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ANNEX I

Educated Unemployed in India by Educational Categories 1971-82

(Persons in thousands)

Sl. No.	Educational Category	1971	1973	1975	1977	1979	1980	1981	1982
1	Matric (10 Years of schooling)	1296.8	2074.0	2641.2	3083.0	3996.3	4568.2	5008.1	5560.2
2	Higher Secondary (12 Years of schooling)	605.2	1071.8	1228.1	1472.3	1881.3	2070.4	2325.5	2439.5
3	Graduate	354.5	688.9	858.7	1074.5	1301.9	1389.8	1542.8	1599.3
4	Post-Graduate	39.1	66.9	77.2	104.9	116.7	134.6	141.9	170.2
	Total	2295.6 (2.3m)	3901.6 (3.9m)	4805.2 (4.8m)	5734.7 (5.7m)	7297.1 (7.3m)	8163.0 (8.2m)	9018.2 (9.0m)	9769.1 (9.8m)

Source: Directorate General of Employment and Training, New Delhi, India.

ANNEX II

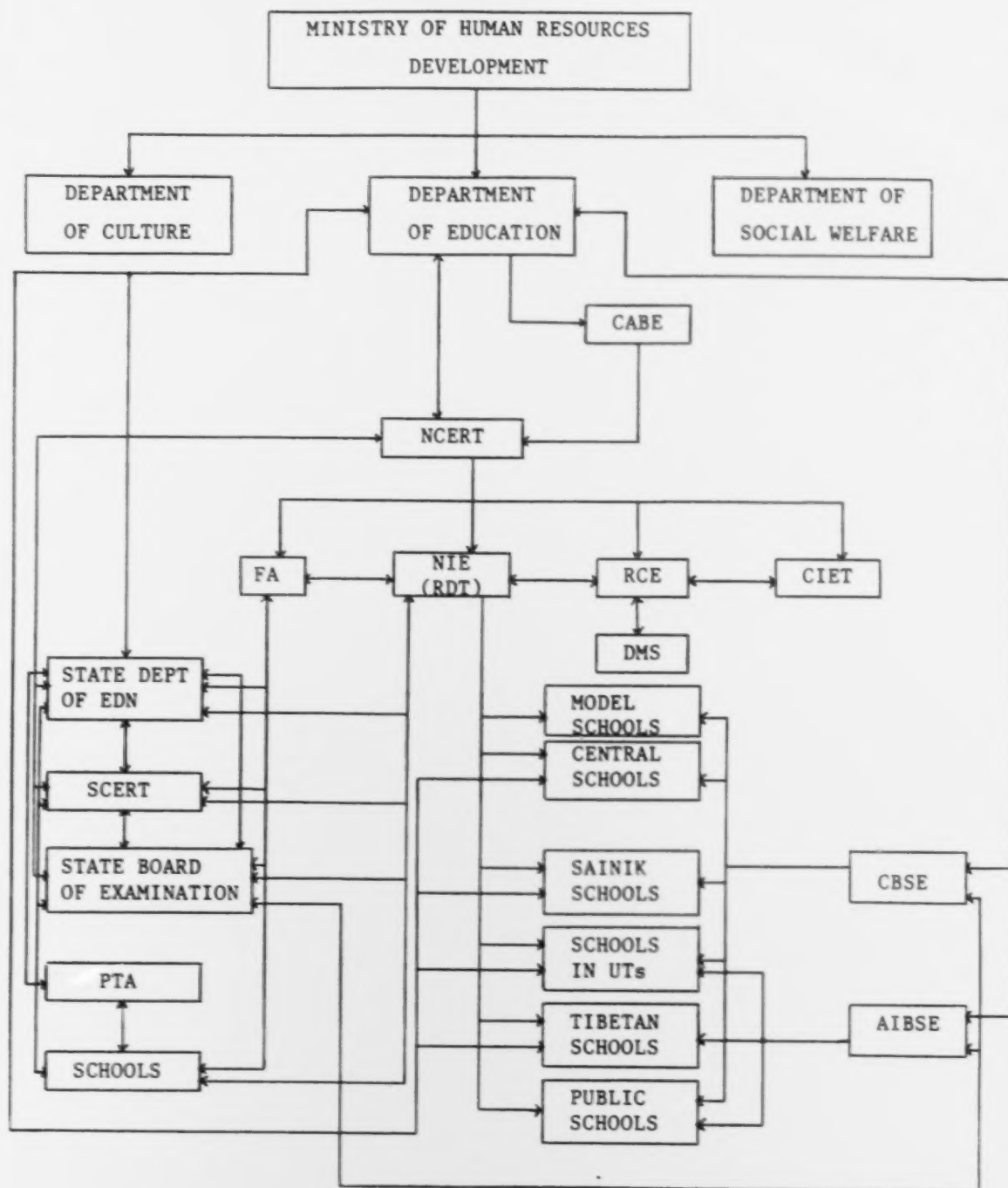


Fig.1: Linkage Between NCERT and Other Institutions at the National and State Level

KEY: CABE: Central Advisory Board of Education NCERT: National Council of Educational Research & Training FA: Field Advisers NIE: National Institute of Education SCERT: State Council of Educational Research & Training PTA: Parent Teacher Association	RCE: Regional College of Education DMS: Demonstration Multipurpose School CIET: Central Institute of Educational Technology CBSE: Central Board of Secondary Education AIBSE: All India Board of Secondary Education
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ANNEX III

Levels and Functions of Various Organisations and Institutions for Implementation of Vocational Education

Functions Levels	Curriculum Development, Research, Training, Evaluation & Monitoring	Administration & Implementation	Supervision and/or Coordination	Examination & Certification
National	DVE, NCERT	Dept. of Education, Ministry of Human Resources Development	DVE, NCERT	AIBVE (All India Board of Vocational Education)
Regional	RCE (NCERT) TTTI	Board of Apprenticeship Training	-	-
State	SCERT, Directorate of Vocational Education, Board of Intermediate Education	Department of School Education, Directorate of Vocational Education	State Council of Vocational Education	State Board of Examinations, Directorate of Vocational Education
District	-	District Vocational Education Officer, District Education Officer	District Vocational Education Officer, District Education Officer	-
Institute	-	Principal	-	-

ANNEX IV

Number of Institutions Running Vocational Courses at the +2 Stage and Enrolment Therein

Sl No	State/Union Territory	No. of Institutions						Enrolment					
		1977	1978	1979	1980	1981	1983	1977	1978	1979	1980	1981	1983
1	Andhra Pradesh	Nil	Nil	22	77	82	107	Nil	Nil	516	1350	1550	3310
2	Gujarat						66						3701
3	Karnataka	13	45	76	82	95	109	1030	2148	2726	3085	2901	4450
4	Maharashtra	Nil	33	107	155	206	250	Nil	1958	5463	7385	9039	10508
5	Tamil Nadu	Nil	709	911	944	1014	NA	Nil	24400	26942	31973	32350	NA
6	West Bengal	69	63	62	62	53	NA	2493	2350	2285	2663	1517	NA
7	Delhi	17	17	17	15	16	15	700	484	473	538	778	734
8	Pondicherry	Nil	5	5	5	5	7	Nil	199	180	184	254	295
9	Kerala	Nil	Nil	Nil	Nil	Nil	21	Nil	Nil	Nil	Nil	Nil	819
10	Assam	Nil	Nil	Nil	Nil	Nil	16	Nil	Nil	Nil	Nil	Nil	NA
11	Haryana	Nil	Nil	Nil	Nil	Nil	22	Nil	Nil	Nil	Nil	Nil	1920

ANNEX V

Area-wise List of Vocational Courses

AGRICULTURE	BUSINESS AND COMMERCE	HOME SCIENCE
Crop Production Dairying Poultry & Swine Production Fisheries Basic Programme in Fruit Horticulture Sericulture Sericulture & Apiculture Farm Mechanic Pesticides, Weedicides & Fertilizers Management Plantation Crops & Management Agricultural Econo- mics & Farm Manage- ment Agro-based Industries Floriculture & Medicinal Plants Fish Processing Technology High-yielding Varieties & Seed Production Plant Protection Soil Conservation & Rural Technology Agro-Engineering	Office Management Accountancy Taxation Laws Stenography Banking Purchasing and Store- keeping Material Management Store Purchase & Management Insurance Import-Export Procedure Cooperation Cooperative Management Cost Accountancy Marketing & Sales- manship Small Industries & Self-Employment Typing Salesmanship & Adver- tising & Display Elementary Industrial Management Receptionist	Food Preservation Nutrition, Dietetics & Food Preparation Canteen Management Bakery & Confectionery Cookery Commercial Garment- making Clothing & Embroidery Textile & Design Child Care & Nutrition Interior Decoration Creche & Pre-school Management Home Management Household Equipment Health Care & Beauty Culture
PARA-MEDICAL	TECHNOLOGY	MISCELLANEOUS
Pharmacy Ophthalmic Technician Rehabilitation Therapy Assistant X-ray Technician Radiology Assistant Medical Record Technician Multipurpose Health Worker (Male)	Surveyor & Estimator Road & Building Construction Building Maintenance General Contracting General Civil Engineering Water Supply & Sanitary Engineering Technician	Photography Printing & Commercial Art Printing & Book- binding Primary Education Music Dancing (Kathak) Dancing (Bharatnatyam) Dancing (Kathakali)

PARA-MEDICAL

TECHNOLOGY

MISCELLANEOUS

Multipurpose Health
Worker (Female)
Psychiatric Nursing
Assistant
Elementary Laboratory
Technology
Dental Hygienist
Dental Technician
EEG-ECG Audiometry
Technician
Hospital House
Keeping
Nursing
Multiple Health
Education

Electrical Domestic
Appliances & Rewinding
Electrical Motor
Rewinding
Electronic Technology
Rural Engineering
Technology
Auto Engineering
Technician
Scooter & Motor-Cycle
Servicing
Auto-Electrical
Maintenance
Air-Conditioning &
Refrigeration
Technology
Servicing Technology
Clock & Watch Repair
Technology
Textile Technician
Sugar Technology
Mechanical Maintenance
Fitting
General Machinist
Fabrication Practice
Leather Technology
Engineering Drawing
& Drafting
Electrical & Mechanical
Engineering
Foundry Technology
Welding Technology
Furniture Maker &
Designer
Motor-Vehicle &
Body-builder
Boiler Attendant
Lineman
Heat Treatment

Dancing (Manipuri)
Applied Arts
Library Science
Tourist Guide
Advocate Assistant

ANNEX VI

Curriculum Design in the States

Name of the State/ Union Territory	Language		General Foundation Course	Related Subjects		Vocational Theory and Practice
	No. of subjects	Weightage in % of time	Weightage in % of time	No. of subjects	Weightage in % of time	Weightage in % of time
West Bengal	2	20	-	3	30	50
Delhi	1	20	15	1 or more	25-30	50-60
Karnataka	2	25	-	-	-	75*
Tamil Nadu & Pondicherry	2	23	-	1	17	60
Maharashtra	1	16	-	3	50	33-34
Andhra Pradesh	1	23	-	2-3	up to 40	32.3-77
Haryana	1	20	5	-	-	75*

*Related subjects are integrated with vocational subjects